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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/644,363	08/20/2003	Thilaka Sumanaweera	2003P05926US	6403

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Siemens Corporation  
Intellectual Property Department  
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EXAMINER

JAWORSKI, FRANCIS J

ART UNIT PAPER NUMBER

3737

DATE MAILED: 08/19/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

# Office Action Summary

Application No.

10/644,363

Applicant(s)

SUMANaweera ET AL.

Examiner

Jaworski Francis J.

Art Unit

3737

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

## Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

## Status

- 1) ☒ Responsive to communication(s) filed on 16 May 2005.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

## Disposition of Claims

- 4) ☒ Claim(s) 1-27 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☒ Claim(s) 15-20 are is/are allowed.
- 6) ☒ Claim(s) 1-8, 12-14, 21-23 and 25 is/are rejected.
- 7) ☒ Claim(s) 9-11, 24, 26 and 27 is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

## Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

## Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some \* c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
  - ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

## Attachment(s)

- ☒ Notice of References Cited (PTO-892)
- ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- ☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)  
Paper No(s)/Mail Date \_\_\_\_\_
- ☐ Interview Summary (PTO-413)  
Paper No(s)/Mail Date \_\_\_\_\_
- ☐ Notice of Informal Patent Application (PTO-152)
- ☐ Other: \_\_\_\_\_

## DETAILED ACTION

### *Claim Rejections - 35 USC § 103*

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Claims 1 –8, 12-14, 21-23 and 25 are rejected under 35 U.S.C. 103(a) as being unpatentable over Shiba (US5299576) in view of applicants' prior art admissions in paras [0001-0007] of the specification.

Shiba teaches that, alternative to conventional synthetic aperture operations with digital scan conversion, a spatial gradient displacement vector may be derived from cross-range correlation calculations from 'picture frames' (the terms refer to an RF data matrix of depth versus transducer number and is therefore in the 'acoustic domain' prior to scan conversion); thereafter the image data and vector data are respectively processed in digital scan converter 22 and graphics processor 52 for display overlay via 24 onto display 26 (Fig. 1). Although Shiba is silent as to the literal Cartesian nature of the display coordinates provided by the DSC it would have been inherently obvious to provide Cartesian coordinates in the screen or display domain in shiba in light of the admission that such is in and of itself old in this art (Claims 1, 4, 6, 13).

In Shiba Figs. 10-11 and col. 15 lines 19-22 a rendered 3D volume view for the display data is contemplated. (claims 2, 12).

Since it was known in the art to provide shading for renderings during ultrasound 3D display per applicants' paras [0003-0007] it would have been obvious to use an available spatial gradient matrix to shade the volume rendering called for in Shiba. (Claim 3).

Corrective filtering is described in Shiba cols. 13-14, bridging. (claims 5, 25).

The calculation of an absolute vector as a vector sum of component vectors would have been well known from vector mathematics. (claim 7).

Weighting in accordance with the acoustic grid position is otherwise practiced in Shiba, see col. 11 lines 25 – 55. (claim 8).

Shiba's Input Signal Focussing Means 34 otherwise acts as a beamformer. (Claim 14).

Re-sampling and opacity weighting were in and of themselves well-known per specification admissions and therefore in association with 3D rendering as in Shiba. (Claims 21-23).

### ***Allowable Subject Matter***

Claims 9 – 11, 24, 26 - 27 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

Claims 15 – 20 are allowed.

Kaufmann et al (US5544283) is cited as of interest.


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This action is NOT made final however the case should be prepared for final action.

Any inquiry concerning this communication should be directed to Jaworski Francis J. at telephone number 571-272-4738

FJJ:fjj

08122005

  
Francis J. Jaworski  
Primary Examiner